

Ball Valve (VS), 2", 2-way, Cv 108



2-year warranty

## Type overview

Type	DN
B249VS	50

## Technical data

Functional data	Valve size [mm]	2" [50]
	Fluid	chilled or hot water, up to 60% glycol, steam
	Fluid Temp Range (water)	-22...280°F [-30...138°C]
	Body Pressure Rating	600 psig WOG psi
	Close-off pressure Δps	600 psi
	Flow characteristic	modified equal percentage
	Leakage rate	ANSI Class VI
	Pipe connection	Internal thread NPT (female)
	Max Differential Pressure (Steam)	35 psi
	Flow Pattern	2-way
	Controllable flow range	90° rotation
	Cv	108
	Maximum Inlet Pressure (Steam)	35 psi [241 kPa]
	Maximum Velocity	15 FPS
Materials	Valve body	Bronze B584-C84400
	Housing seal	PTFE
	Stem	316 stainless steel
	Stem seal	RPTFE
	Seat	RPTFE
	Lock nut	stainless steel
	Retainer	B584-C84400 bronze
	Ball	316 stainless steel
Suitable actuators	Non Fail-Safe	GMB(X) PRB(X) SY1
	Spring	AF
	Electrical fail-safe	GMB(X) PKRB(X)

## Safety notes



- **WARNING:** This product can expose you to lead which is known to the State of California to cause cancer and reproductive harm. For more information go to [www.p65warnings.ca.gov](http://www.p65warnings.ca.gov)

## Product features

**Application** This valve is typically used in air handling units on heating or cooling coils, and fan coil unit heating or cooling coils. Some other common applications include Unit Ventilators, VAV Box re-heat coils and bypass loops. This valve is suitable for use in a hydronic system with variable flow.

This valve is designed with MFT functionality which facilitates the use of various control input.

Up to 35 psi steam

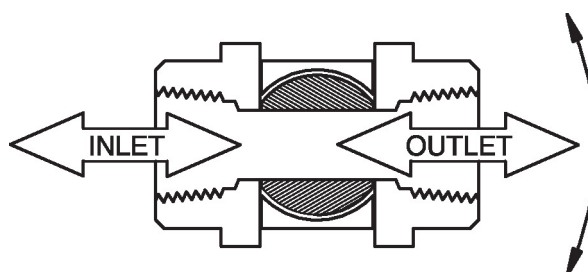
1/2" - 2" 600 PSIG WOG, Cold Non-Shock

Federal Specification: WW-V-35C, Type II

Composition: BZ

Style: 3

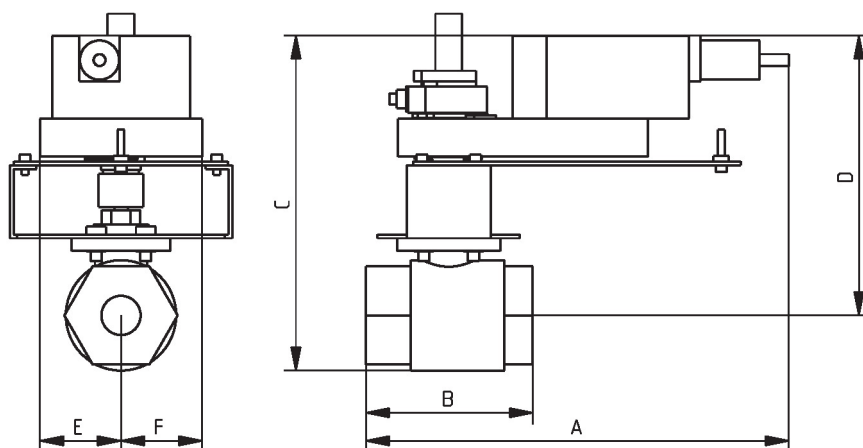
### Flow/Mounting details



## Dimensions

Type	DN	Weight
B249VS	50	6.2 lb [2.8 kg]

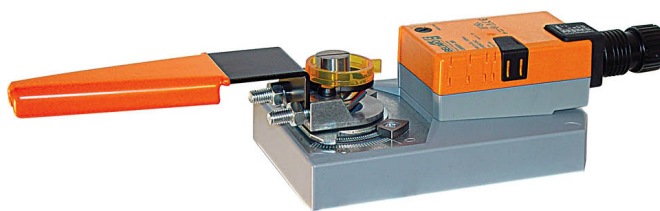
## Dimensions



B249VS+GK..X1

A	B	C	D	E	F
11.9" [302]	4.7" [119]	10.0" [254]	7.9" [200]	2.3" [58]	2.3" [58]

On/Off, Floating point, Non fail-safe, 24 V



5-year warranty



## Technical data

Electrical data	Nominal voltage	AC/DC 24 V
	Nominal voltage frequency	50/60 Hz
	Nominal voltage range	AC 19.2...28.8 V / DC 21.6...28.8 V
	Power consumption in operation	4 W
	Power consumption in rest position	2 W
	Transformer sizing	6 VA
	Electrical Connection	18 GA plenum cable, 1 m, with 1/2" NPT conduit connector, degree of protection NEMA 2 / IP54
Functional data	Overload Protection	electronic throughout 0...95° rotation
	Torque motor	40 Nm
	Direction of motion motor	selectable with switch 0/1
	Manual override	external push button
	Angle of rotation	Max. 95°
	Angle of rotation note	adjustable with mechanical stop
	Running Time (Motor)	150 s / 90°
	Running time motor note	constant, independent of load
	Noise level, motor	45 dB(A)
Safety data	Position indication	Mechanical, 30...65 mm stroke
	Power source UL	Class 2 Supply
	Degree of protection IEC/EN	IP54
	Degree of protection NEMA/UL	NEMA 2
	Enclosure	UL Enclosure Type 2
	Agency Listing	cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02 CE acc. to 2014/30/EU and 2014/35/EU
	Quality Standard	ISO 9001
	UL 2043 Compliant	Suitable for use in air plenums per Section 300.22(C) of the NEC and Section 602 of the IMC
	Ambient humidity	Max. 95% RH, non-condensing
	Ambient temperature	-22...122°F [-30...50°C]
	Storage temperature	-40...176°F [-40...80°C]
	Servicing	maintenance-free
Weight	Weight	4.1 lb [1.9 kg]
Materials	Housing material	Galvanized steel and plastic housing

## Technical data

**Footnotes** †Rated Impulse Voltage 800V, Type action 1, Control Pollution Degree 3.

## Accessories

Electrical accessories	Description	Type
	Battery backup system, for non-spring return models	NSV24 US
	Battery, 12 V, 1.2 Ah (two required)	NSV-BAT
	Feedback potentiometer 140 $\Omega$ add-on, grey	P140A GR
	Feedback potentiometer 500 $\Omega$ add-on, grey	P500A GR
	Feedback potentiometer 1 k $\Omega$ add-on, grey	P1000A GR
	Feedback potentiometer 2.8 k $\Omega$ add-on, grey	P2800A GR
	Feedback potentiometer 5 k $\Omega$ add-on, grey	P5000A GR
	Feedback potentiometer 10 k $\Omega$ add-on, grey	P10000A GR
	Auxiliary switch 1x SPDT add-on	S1A
	Auxiliary switch 2x SPDT add-on	S2A

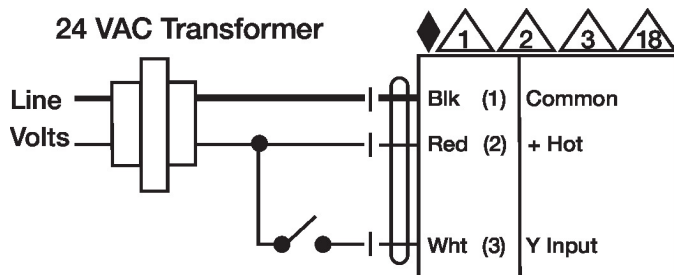
## Electrical installation

### ✂ INSTALLATION NOTES

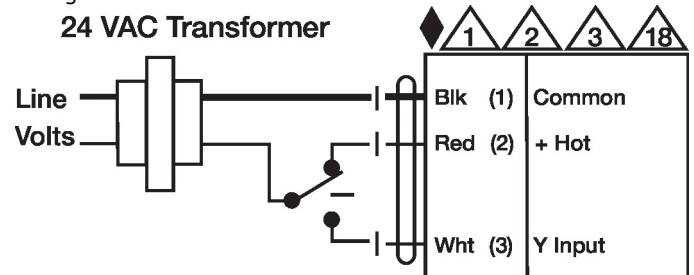
- Ⓐ Actuators with appliance cables are numbered.
- ⚠ Provide overload protection and disconnect as required.
- ⚠ Actuators may also be powered by DC 24 V.
- ⚠ Actuators Hot wire must be connected to the control board common. Only connect common to neg. (-) leg of control circuits. Terminal models (-T) have no-feedback.
- ⚠ Actuators may be connected in parallel if not mechanically linked. Power consumption and input impedance must be observed.
- ◆ Meets cULus requirements without the need of an electrical ground connection.
- ⚠ **Warning! Live electrical components!**  
During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.

### Wiring diagrams

On/Off



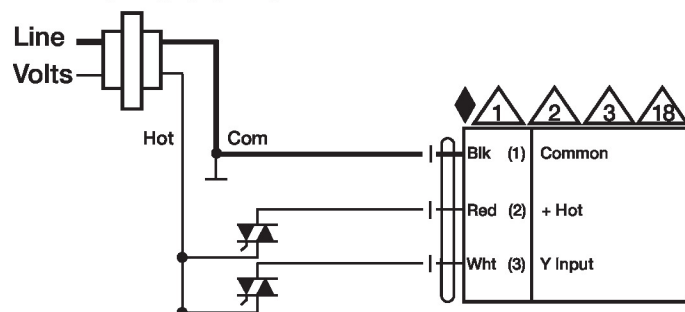
Floating Point



## Electrical installation

## Wiring diagrams

## 24 VAC Transformer



## Floating Point - Triac Sink

## 24 VAC Transformer

